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THE TOWN OF ADARE, LIMERICK.

RUINS OF THE BLACK ABBEY.

THERE are probably but few places of similar size throughout the United Kingdom, containing more numerous remains of the ecclesiastical establishments of past ages, than the little town of Adare, in the county of Limerick. We will briefly detail the early history of the town, before speaking of these establishments.

Adare is situated a few miles south-west of the city of Limerick. The early history of the town is not known, previous to the arrival of the English in Ireland, in the time of Henry the Second. About the year 1279, John Fitzjerald, first earl of Kildare, built a monastery, since called Black Abbey, and represented in our frontispiece. This monastery was dedicated to the Holy Trinity, and amply endowed for the redemption of Christian captives. About the year 1310, Adare was incorporated by Edward the Second; and about sixty years afterwards, Edward the Third issued a writ to the sheriff of the county, and all officers connected with the subsidies, &c., prohibiting them under heavy penalties from demanding of the provost or commonalty of Adare any services or customs, until the town, which had been then recently burned and destroyed by the insurgent Irish, should be fully rebuilt and inhabited.

A castle was built at Adare by the O'Donavons, rebuilt by the second Earl of Kildare in 1326, and enlarged and fortified by several of his successors. The castle was afterwards ravaged and burnt by Turlough O'Brien, but soon repaired. A charge of treason having been brought against one of the earls, the castle was declared forfeited to the crown, but was subsequently restored to him. During the administration of Cardinal Wolsey, the Earl of Kildare had to go to London to prove his innocence of certain crimes charged against him, and shortly after this, the castle and the other family estates were again escheated to the crown. The castle was a frequent scene of political and warlike turmoil. In the year 1578 it withstood a siege of eleven days, but was at length taken by the English, and garrisoned by a powerful body of troops. An unsuccessful attempt to regain it was made by the Desmonds, which is thus described by an old writer:—

In 1579, John of Desmond, with 450 men, horse and foot, besieged the town: so that the garrison dared not peep abroad till their victuals failed them—and then necessity whetted their courage, and made their swords as sharp as their stomachs, so that Sir John was forced to retire. The English had but one small cot, which would hold about eight men, and by the help of it 120 men of the garrison were wafted over the river into the Knight of Glenn's country, and being unexpected there, did great execution,

however, they staid so long, that the Knight of Glenn and Sir John collected thirty horse, and 400 foot,—some Irish and some Spaniards,—and coming up with them, a sharp skirmish for eight hours ensued: the English made good their retreat into Adare, without any considerable loss, and killed about fifty of the enemy.

On a subsequent occasion the Earls of Desmond and Kerry, with a strong force, captured the castle, and put the whole of the garrison to the sword. They were however doomed not to be long in possession of it, for Colonel Zouch came from Cork and took the castle,—imitating the example of his predecessors in putting the garrison to the sword. In less than twenty years after this it was again besieged by the insurgent Irish, but without success, although at one time the garrison were reduced to such distress that they were without food for several days and obtained a supply of water only by excavating a subterraneous passage to the bed of the river. The castle was captured in 1641; but upon being again retaken in 1657, in the time of Cromwell, it was ordered to be dismantled, and has never since been a place of defence.

We may now speak of the present appearance of the ancient buildings with which Adare abounds. The remains of the castle are still of considerable extent; but although the proprietor has taken some precautions to preserve it from utter ruin, it seems to be decaying rapidly. Black Abbey, which, as we have said, was originally a monastery, continued as such till the time of Queen Elizabeth, when, with the other religious house founded here, it was granted to Sir Henry Wallop, to be held for ever in fealty, in free and common socage, at a yearly rent of 26*l.* 17*s.* 8*d.*, on condition of his maintaining two able horsemen on the premises. Some large and perfect ruins of this friary still remain. The steeple or tower has a sort of castellated appearance, and is supported by a plain arch, with four diagonal ogives meeting in the centre, and stairs leading to the battlements: the nave and choir are small and plain, without anything remarkable: in the rear are several other ruins. The entrance to the friary was by a low gate on the west side, which is still standing.

Another abbey was built on the bank of the river Mague, and still presents many interesting remains of its former beauty. There are still to be seen the nave, the choir, and south transept of the church, which, with the exception of the roof, are tolerably entire. From the intersection rises a beautiful slender square tower; and the choir contains several stalls, niches, fonts, and stoups, some of them of very elegant forms. On the east side of the transept are niches, fonts, and three chantry chapels, or oratories. The cloisters are tolerably perfect, and round them are arranged the principal offices, the refectory, and various other domestic buildings. The prevailing style of architecture is the later English.

The remains of a third abbey are to be seen on the south side of the river. This was a Franciscan abbey, founded by Thomas, seventh Earl of Kildare, who married Joan, daughter of the Earl of Desmond. The remains consist chiefly of a lofty and slender square tower, a nave, and part of the conventual choir, recently fitted up by the Earl of Dunraven as the parish church. Some cloisters on the north side of the abbey have been restored by the earl, and a splendid family mausoleum erected near them. The refectory, and part of the domestic buildings, have been restored under the direction of the Countess of Dunraven, and fitted up as a school house; the restorations being made faithfully to correspond with the general style of architecture of the abbey. The school room is a spacious apartment, lighted by fifteen windows. A good dwelling house has been built for a master and governess; and the expense of this, as well as the whole expense for educating 300 children, is defrayed by the noble countess.

It will thus be seen that there are still remains of three ancient abbeys, as well as a castle, in this little town. Indeed it appears that there must have been still more than these; for when the grant, of which we have spoken, was made to Sir Henry Wotton, it included the Monastery of the Holy Trinity; the possessions of the Grey Friars, of the Preaching Friars, and of the Augustine Friars; the Abbey of Monaster na Aonaig, and the Nunnery of Moinistir na Gcailleach.

The old town of Adare, (that which contained the greater proportion of the buildings which we have been describing,) was on the eastern bank of the river Mague; but the modern town is on the western bank of the river, about half a mile distant from the old town. A narrow, level, but fine and much admired bridge of fourteen arches connects the two. It was built by the fifth Earl of Kildare, and is still in good preservation. The whole neighbourhood is in the possession of the Earl of Dunraven, who, as fast as the leases of the property fall in, makes every endeavour to improve the town. The town does not contain much more than a hundred houses, many of which are very old and badly built; but it seems probable, from the circumstance just alluded to, that the town will gradually improve. There are a modern hotel, post office, &c., and the mail from Limerick to Tralee passes through the town.

Near the town is the modern residence of the Earl of Dunraven, Adare Castle, which, when completed, will be one of the most splendid mansions in Ireland. The style of architecture of this noble building, which we believe is not yet quite completed, is that of the more enriched period of the later English. It is built of hewn limestone found upon the estate, and is situated on the western bank of the river, in a very extensive and finely wooded demesne, commanding a beautiful view of the numerous and venerable remains which we have described. Near the house stands an old ash tree, which is connected with a circumstance of no little interest to the proprietor of the mansion. On the approach of a party of marauders, during the disturbed state of Ireland consequent on the revolution of 1688, some family documents and other articles of great value were deposited under this ash tree, until the danger was past.

The neighbourhood of Adare contains a singular little community called Palatines: these were German Protestants, who settled here about the year 1740, since which time they have greatly increased in number, but still continue a distinct body. Mr. Fitzgerald says:—

> The parish contains about 5300 acres of land, a great part of which is cultivated, as many Palatine families reside here, who are a very industrious, sober, well-conducted people. Their houses and farms have every appearance of neatness and comfort; and they have of late intermarried with the natives, who, since they have been enabled to take leases for lives, have acquired habits of industry, knowledge of cultivation, and proper implements of husbandry, from the Palatine.

The river Mague is navigable from the Shannon to the town of Adare, by the aid of a short canal; and there are two quays, one at the termination of the canal in the town, the other about a mile down the river, both constructed at the expense of Lord Dunraven. There are eight fairs at Adare in the course of the year, for the sale of farming stock and implements: these fairs are well attended.

RESPONSIBILITY OF AN AGENT.

"WHOEVER," says Dr. Paley, "undertakes another man business, makes it his own; that is, promises to employ upon it the same care, attention, and diligence, that he would do if it were actually his own; for he knows that the business was committed to him with that expectation. And he promises nothing more than this. Therefore an agent is not obliged to wait, inquire, solicit, ride about the country, toil, or study, whilst there remains a possibility of benefiting his employer. If he exert as much activity, and use such caution, as the value of the business in his judgment deserves, that is, as he would have thought sufficient if the same interest of his own had been at stake, he has discharged his duty, although it should afterwards turn out, that by more activity, and longer perseverance, he might have concluded the business with greater advantage."

Mr. Macculloch remarks that there seems to be a great deal of laxity in this statement. It is necessary to distinguish between those who, in executing a commission, render their services for a particular occasion only, without hire, and those who undertake it *in the course of business*, making a regular charge for their trouble. If the former bestow on it that ordinary degree of care and attention which the *generality of mankind* bestow on similar affairs of their own, it is all, perhaps, that can be expected: but the latter will be justly censurable if they do not execute their engagements on account of others with that care and diligence which a "*provident and attentive father of a family*" uses in his own private concerns. It is their duty to exert themselves proportionally to the exigency of the affair in hand; and neither to do anything, how minute soever, by which their employers may sustain damage, nor omit anything, however inconsiderable, which the nature of the act requires. Perhaps the best general rule on the subject is, to suppose a factor or agent bound to exert that degree of care and vigilance that may *be reasonably expected of him by others*. At all events, it is clear he is not to be regulated by his own notions of the value of the business. A man may neglect business of his own, or not think it worth attending to; but he is not therefore to be excused for neglecting any similar business he has undertaken to transact for others.

As meadows parched, brown groves, and withering flowers,
Imbibe the sparkling dew and genial showers;
As chill dark air inhales the morning beam;
As thirsty harts enjoy the gelid stream;
Thus to man's grateful soul from heaven descend,
The mercies of his Father, Lord, and Friend!

SIR WILLIAM JONES.

MAN has never woven a tapestry like that which May spreads beneath us, in its green and flowery meadows; and where are the imitative works of art that can compete with a flower-garden, can even approach to a single flower? But we admire the imitations, and almost forget to look at the reality and the original. Yet while the former are costly, or even inaccessible, the others are given freely, without cost, and they are given freely to all. The Creator has even empowered us to create for ourselves, and almost without labour, beauty which no art can approach, and no price could teach it to rival. We sow a few seeds in a few minutes, and we become artists, under the kindness of the Great Artist, producing pictures, imperfect imitations of which we must have purchased with gold, as not all the gold of the universe could have stimulated an artist to approach to them.—MACCULLOCH.

MAN'S a poor deluded bubble,
Wandering in a mist of lies;
Seeing false, or seeing double,
Who would trust to such weak eyes?
Yet presuming on his senses,
On he goes most wondrous wise,
Doubts of truth, believes pretences,
Lost in error, lives and dies.—DODSLEY.

PEACE is the proper result of the Christian temper. It is the great kindness which our religion doth us, that it brings us to a settledness of mind, and a consistency within ourselves.—BISHOP PATRICK.

ON OBTAINING COPIES OF ENGRAVINGS AND MEDALS BY MEANS OF GALVANISM.

II.

WE are too much accustomed to judge of the importance of an invention by its practical utility; and often denounce as useless an invention which cannot be immediately applied with perfect success. If this feeling were to become general among cultivators of science, our arts and manufactures would be incapable of further improvement, and, indeed, the human race would participate in the general apathy, and our physical condition would be in a state of retrogradation.

The inventor of the electrotype, in speaking of its application to the arts, expresses himself in modest terms. He does not entertain any very sanguine notions respecting its future general application to the art of engraving: this he leaves to the practical engraver and printer. He wishes for a fair trial of his invention, and feels assured that it may be found a useful addition to many trades, and branches of art; supplying as it does, a means of producing a cast or a die in hard metal, without the agency of heat or pressure, and in extreme perfection and well defined sharpness. Nor is its application confined to copper only, since the metallic salts in general, may, by the voltaic process, be made to deposit their metals upon any metalic nucleus that is presented to them. In addition to this, perfect copies may be obtained of bronzed figures, and these copies do not require chasing when taken out; nor does there appear to be any inconvenient limit as to size. Publishers of music may also by this process have their plates in relief. Copies of wood-engravings may also be made in copper by this voltaic process, which also bids fair to abridge the important process of stereotyping. Its use in the potteries may also be important, where eight or ten copper-plates of a similar pattern are often required; so that, one being engraved, the required number can be produced in voltaic copper.

It appears, then, that in the present early state of the electrotype, there are five distinct modes of application:

First, Engraving in relief on a plate of copper.

Second, Depositing a voltaic copper-plate with the lines in relief.

Third, Taking fac-similes of a medal, (reverse or obverse,) or of a bronze cast.

Fourth, Taking a voltaic impression from plaster or clay.

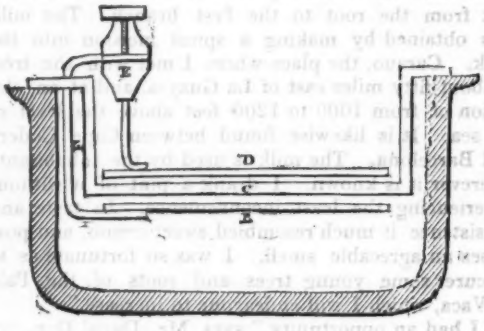
Fifth, Multiplying the number of already engraved copper-plates.

We now proceed to supply a few experimental details on the above applications of the electrotype.

1. To engrave in relief on a plate of copper.—To a plate of copper, such as is used by the engraver, let a piece of copper wire be neatly soldered. Give the plate a coating of cement, and when cool, write or draw the design on the wax, with a black lead pencil, or a point. Then cut through the wax with a graver or a steel point, taking care that the copper is exposed on every line.

The plate must now be immersed in an acid solution, composed of three parts water, and one of nitric acid. When the exposed lines are slightly corroded by the acid, the plate must be removed to the voltaic apparatus shown in the annexed figure, which represents a section of an earthenware vessel, A, containing a solution of sulphate of copper. C, an inner pan, of earthenware or wood, having a plaster of Paris bottom, made to fit into the interior of A, and

containing a saline solution. B, the copper-plate on which the voltaic copper is deposited: it is immersed in the sulphate of copper, and is supported by the wire F, which unites by means of the binding screw E, with the wire soldered to the zinc plate D, in the saline solution.



After the voltaic copper has been deposited in the lines engraved in the wax, the surface of the formation will be found to be more or less rough, according to the time employed in the voltaic deposition of the copper: to remedy this, the surface must be rubbed with a piece of smooth flag or pumice-stone, with water. Then, to remove the wax ground-work, the plate must be heated, and washed with spirits of turpentine and a brush. The plate is now ready to be printed from at an ordinary press.

2. To deposit a solid voltaic plate, with the lines in relief.—A plate of copper, lead, silver, or type-metal, is engraved to the depth requisite to print from; the lines must be flat at bottom, and, as nearly as possible, of the same depth. When thus engraved, the plate should be heated just sufficient to melt a small lump of virgin wax, mixed with a few drops of turpentine. Just before the plate becomes cold, the wax should be wiped apparently quite off: there will still remain a minute film of wax, quite sufficient to prevent the voltaic copper from adhering to the plate.

A piece of wire is then soldered to the back, and two coats of thick varnish (made by dissolving shell-lac in spirits of wine) applied to the back and edges of the plate; but Mr. Spencer recommends, if the plate be large, to imbed it with plaster of Paris, or Roman cement, in a box, the size of the plate, allowing the wooden edge of the box to project just as much above the surface of the plate, as the thickness of the voltaic plate is intended to be. Care must be taken to keep the engraved surface of the plate clean.

Should the engraving be made on lead, or type-metal, the preparation of wax is not required, because heat is sufficient to loosen the plates.

3. Fac-similes of medals, &c., may be taken by two different methods: the one by depositing a mould of the voltaic metal on the face of the medal, having first heated it, and applied wax; and then, by a subsequent operation, depositing the metal in the mould thus formed. The readiest way, however, is to take an impression of the coin or medal in milled sheet-lead, as described in the former article.

4. A voltaic impression, from a plaster or clay model may also be taken by the method described in the former article.

5. To obtain any number of copies from an already-engraved copper plate, an impression of the plate is made in lead, and if a powerful press be employed, the lead will have every line in relief that had been sunk in the copper.

Wood-engravings may also be copied by the same method. On this part of the subject, Mr. Spencer remarks,—

Plumbers who have handled lead for the greater portion of their lives are astonished to find it so susceptible of pressure. On the contrary, wood engravers did not, until now, imagine their blocks would stand the pressure of a screw press on a lead surface without injury; but such is the fact in both instances. In the manner in which box-wood is used for wood engravings, being horizontal sections, it will sustain a pressure of 8000lbs without injury, provided the pressure is perfectly perpendicular.

In the management of the simple apparatus which is employed in the electrotype, it is necessary to have the binding-screws, wires, and all metallic surfaces, quite clean and bright. The zinc plate should be occasionally taken out of the arrangement, during the continuance of the process, and cleansed by washing it in water; and the saline solution may also be occasionally renewed. Crystals of sulphate of copper should be added from time to time to the solution of that salt, in order to keep it saturated.

We now conclude our present notice of this interesting process, assuring our readers that if they are anxious to possess elegant and correct copies of medals, and coins, &c., they will find no difficulty in procuring and managing the simple apparatus described in fig. 2 of our former article.

INTERRUPTED MEDITATION.

'Tis a bitter thing in this life of pain,
When the spirit has spurned its earthly chain,
And sought in the bosom's still recess,
The joy of its own deep loneliness;
And though the sensations which then we feel,
May be rather of sorrow than of weal,
It is something to think there is that in their tone,
Which the spirit may drink in, all its own:
It is bitter then to hear the din
Of another's voice break rudely in,
And mar the mirror which just has caught
Some bright reflection, some cherished thought;
Some vision wove with so slight a spell,
That a sound or a word may the charm dispel,
And leave no trace of its path behind,
But a restless vacancy of mind:
As in those fair pictures that lie imprest
On a lake of the mountain's tranquil breast—
Shadows so faultless in shapes and dies,
That they only are not realities.
Let an air but steal down the mountain's side,
Let a pebble the sleeping waters divide,
Let a leaf but fall from a withered spray,
The fairy delusion will pass away,
And ripples and circles will crowd o'er the scene,
And confusion will revel where beauty has been.

THE RUBI, *a Tale of the Sea.*

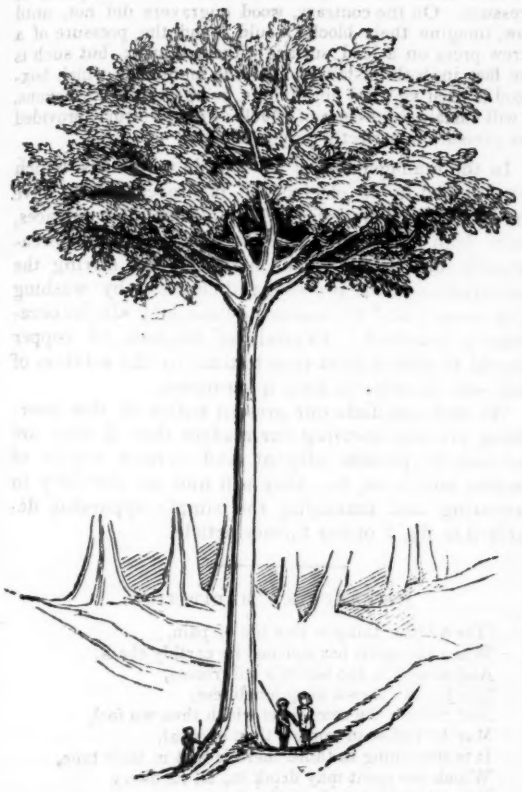
LET no one be seduced by the enthusiasm of noble thoughts to embark in an enterprise, of which he may not have securely weighed the motives and probable results.—WARD.

THE good in this state of existence preponderates over the bad, let miscalled philosophers tell us what they will. If our affections be tried, our affections are our consolation and comfort; and memory, however sad, is the best and purest link between this world and another.—DICKENS.

THE celebrated French philosopher, Lavoisier, author of *Elements of Chemistry*, and other scientific works, was executed, during the terrors of Robespierre's tyranny, for the pretended crime of having adulterated snuff with ingredients destructive to the health of the citizens! On being seized, he entreated at least to be allowed time to finish some experiments in which he was engaged; but the reply of Coffinhall, the president of the gang who condemned him, was characteristic of the savage ignorance of those monsters in human form:—"The Republic does not want *savans* or chemists, and the course of justice cannot be suspended."

THE COW-TREE OF THE CARACCAS,

(Palo de Vaca.)



HUMBOLDT describes the *Palo de Vaca*, or *Cow-Tree*, as growing on the shores of the Cordilleras, and found most plentifully between Barbula and the lake of Maracaybo. "On the barren flank of a rock," says this interesting writer, "grows a tree with dry and leather-like leaves; its large, woody roots can scarcely penetrate into the stony soil. For several months in the year not a single shower moistens its foliage. Its branches appear dead and dried; yet as soon as the trunk is pierced, there flows from it a sweet and nourishing milk. It is at sunrise this vegetable fountain is most abundant. The natives are then to be seen hastening from all quarters, furnished with large bowls, to receive the milk, which grows yellow, and thickens at the surface. Some employ their bowls under the tree, while others carry home the juice for their children. This fine tree rises like the broad leafed star-apple. Its oblong and pointed leaves, tough and alternate, are marked by lateral ribs; some of them are ten inches long. We did not see the flower. The fruit is somewhat fleshy, and contains a nut,—sometimes two. The milk, obtained by incisions made in the trunk, is glutinous, tolerably thick, free from all acrimony, and of an agreeable and balmy smell. It was offered to us in the shell of the tutuno, or calabash tree. We drank a considerable quantity of it in the evening, before we went to bed, and very early in the morning, without experiencing the slightest injurious effects. The viscosity of the milk alone renders it somewhat disagreeable. The negroes and free labourers drink it, dipping into it their maize, or cassava bread."

I shall now quote from a communication on the subject from Trinidad, addressed by Mr. D. Lochhart, to A. B. Lambert, Esq., one of the vice-presidents of the Linnæan Society:—"I have just returned from an excursion to the Caraccas, where I collected the juice of a cow-tree, and I have now the pleasure of sending you a phial of the milk, together with a few leaves, and a portion of the root of the tree. The Palo de Vaca is a tree of large dimensions. The one that I procured the juice from had a trunk seven feet in diameter, and it was one hundred feet from the root to the first branch. The milk was obtained by making a spiral incision into the bark. Carauo, the place where I met with the tree, is about fifty miles east of La Guayra, and at an elevation of from 1000 to 1200 feet above the level of the sea. It is likewise found between Cape Codera and Barcelona. The milk is used by the inhabitants wherever it is known. I drank a pint of it without experiencing the least inconvenience. In taste and consistence it much resembled sweet cream, and possesses an agreeable smell. I was so fortunate as to procure some young trees and roots of the Palo de Vaca, which I will endeavour to increase."

"I had an opportunity," says Mr. David Don, "of examining attentively the leaves of the Palo de Vaca, and found them to approach very close to those of several South American species of *ficus*. The disposition of the nerves and veins was precisely similar, which, together with the insertion and consistence of the leaves themselves, appear to justify the propriety of the place assigned to the Palo de Vaca, by M. Kunth, who has arranged it in the family of *Urticeæ*, under the name of *Galactodendron utile;* but neither he nor myself have seen the fruit or flower; so that as a genus it rests on very insufficient grounds. The tree, however, is evidently related to *ficus* or *brossimum*. The juice contained in the phial sent to Mr. Lambert had the appearance of cream, and notwithstanding that it had suffered materially from the long voyage, the taste was by no means unpalatable."

Mr. Fanning, who came from the Caraccas to England in 1827, brought home small specimens of the cow-tree, the first ever seen in England, together with a drawing of the tree, and brought with him at the same time some of the milk, dried in the form of lozenges. These plants all unfortunately perished.

Sir Robert Kerr Porter has had the goodness to send me from the Caraccas, a bottle of the milk of the Palo de Vaca, together with the portion of a branch, containing three leaves from an *old* tree, and a branch with its leaves, of a *young* tree with a piece of the bark, and enhanced the truly valuable donation by a beautiful sketch of the tree itself, highly characteristic of his elegant pencil. I cannot resist the pleasure of giving entire the graphic description of his visit to the Palo de Vaca, as contained in his very interesting letter to me, under date, June 8, 1837.

"The period at which my visit was made to this marvellous vegetable production, unfortunately found it without flower or fruit; but as I have in vain for months and months past endeavoured to ascertain the particular time of either or both, I was compelled to seize the first leisure four or five days, to make an excursion into the mountainous part of the country where it grows.

"We journeyed over a most rugged suite of mountains to the Cordillera on the north coast, which occupies nearly its whole extent; and at a distance of fifty miles from this capital, at an elevation, I should suppose, of between four and five thousand feet above the level of the Carribean sea, reached the neighbourhood of the tree sought for, having passed the night at a sugar estate, in one of the pretty and productive vallies abounding near the coast. At six the following morning, attended by some natives, we began an ascent of about a league, up the face of an awfully steep

mountain, covered with a dense forest of enormous trees and thick jungle. The people were actually obliged to cut a pathway through the almost impenetrable hanging branches, and other bushy interruptions. After a most toiling walk, in a couple of hours we reached the Palo de Vaca grove, and I assure you that I felt most amply repaid, by the sight of so many marvellously huge vegetable productions, for all the fatigue I had already undergone. The tree our people first commenced their milking operations on, measured somewhat more than twenty feet in circumference, about a man's height, from its roots; from whence its magnificently colossal stem rose to full sixty feet, clear of the smallest branch or leaf. The vast arms and minor branches spread themselves at this elevation on every side, certainly to an extent from the centre of at least twenty-five feet; the whole luxuriantly clothed with immense leaves. This splendid portion of the tree I am sure cannot add less than forty additional feet to its wonderful elevation.

"The Indians of our company told us that the milk is far more profuse in its flowing when the requisite incisions are made in the bark on the increase of the moon, than it is on the decrease; however, we got a couple of bottles of it in a quarter of an hour, but from two trees. When the wound was made in that on which I looked with so much wonder and *indescribable feeling*, the snowy current broke forth with great violence. Its colour and consistency were precisely that of the animal milk, with a taste not less sweet and palatable; yet it left on the tongue a slight bitterness, and on the lips a considerable clamminess; an aromatic smell was most strongly perceptible when tasting it. I have sent you a small piece of the bark, in which is contained the lacteal fluid. It varies from an inch to one and a half in thickness. The wood forming the body of the tree is white, hard, and close grained. The dimensions I have given were exceeded, by many feet in every way, by numbers of others of the same species that grew within some yards around. The forest abounds in thousands of different kinds of trees, many even exceeding in size the wonderful Palo de Vaca. With regard to the *living colour* of the leaves, it differs little in depth of green and polish from those of the laurel leaf."

When the cork of the bottle of milk, transmitted by Sir Robert Kerr Porter, was withdrawn, it was followed by an explosive report, almost as loud as that of a pistol; succeeded by a violent effervescence and overflow of the lactescent liquid, accompanied by a copious disengagement of carbonic acid gas, in a visible form, resembling light smoke from its combination with aqueous vapour.

The consistence, taste, and smell were precisely that of thick sour cream, with curdy granulations deposited on the surface in contact, and it felt somewhat viscid or clammy to the touch. I used a little of it in *tea*, and it relished very well, and imperfectly mixed like sour cream, imparting a curdled appearance, and tasting somewhat balsamic.

The Palo de Vaca, whether considered in reference to its "milk," or rather cream, or its bark, affords products among the most remarkable of the wonders of vegetation. Both the milk and bark contain the elements of nutritious and wholesome food for man, and bread formed of its bark would be almost equal to that made from corn;—for the immediate or proximate parts of wheaten flour are found in the bark of the cow-tree—so that the Palo de Vaca yields both bread and milk.

[Abridged from *A Descriptive Account of the Palo de Vaca*, by JOHN MURRAY, F.S.A.]

ON MIGRATION.

II.

As fables tell, an Indian sage,
The Hindostani woods among,
Could in his desert hermitage,
As if 'twere marked in written page,
Translate the wild bird's song.

I wish I did his power possess,
That I might learn, fleet bird from thee,
What our vain systems only guess,
And know from what wide wilderness
You came across the sea.

THE MIGRATION OF BIRDS.

THE migration of the feathered race, has occupied much attention, and afforded subject for many curious inquiries, from a very early period to the present time, nor is the topic exhausted: numerous interesting facts still remain unexplained, and a vast field for observation still presents itself to scientific research.

Birds migrate northwards and southwards, so that there is in our latitudes at least a periodical ebb and tide of spring and winter visitors. The former gradually work their way as the season advances, from the warm regions of the south, where they have enjoyed food and sunshine, and have escaped the rigours of our winter; and arrive here to cheer us with their songs, and to make *our summer months still more delightful*. The latter being inhabitants of the arctic circle, and finding in the forests and morasses of that region, a sufficient supply of food in summer, are only led to quit their homes when the early winter begins to bind up the lakes, and the surface of the earth, and to deprive them of sustenance. It is then that they seek our milder shores, and accordingly at the season when our summer visitants are leaving us to proceed on their journey southwards, these songless inhabitants of the north arrive to take their places, and to feed on such winter fruits and berries, and such insects and aquatic plants, as are denied to their own inhospitable climate. These visitors, though mute, are of no mean value—for many of them are esteemed as delicate food, and in consequence the red-wing, field-fare, woodcock, snipe, widgeon, &c., are wont to receive homage and admiration from those who could listen to the sweet warblings of the nightingale, or the tender cooings of the turtle-dove with perfect indifference.

The visits of these birds, as well as of those from the south, depend greatly on the state of the weather, which appears to hasten or retard their flight as the season may be. Thus we often find that a few of our summer-birds leave the main body and arrive sooner than the rest, while the others have been kept back by a sudden return of unfavourable weather, according to the adage, "One swallow does not make a summer." It is a singular fact that the early comers are male birds, arriving as it would seem, in search of some fit spot to which to introduce their mates. The bird-catchers are aware of this, and prepare their traps accordingly, so that nightingales and other singing-birds are often snared on their first arrival, and spend the short remainder of their lives in captivity. Many birds return not only to the same country, but to the very spot they left in the preceding season, a fact which has been ascertained by catching and marking some of them; while other birds do not confine themselves to a particular country, but range from one to another, as circumstances may dictate.

It has been observed that certain migratory birds do not leave their summer abode, unless the winter is to be one of unusual severity. This fact is surprising;

and the question "By what means is the bird instructed as to the coming season," naturally presents itself to the mind, but still remains unanswered. What their instinctive knowledge is, and whether they have any power of reflecting on the phenomena by which they are surrounded, will ever probably be a mystery to us, but we may trace in this, as in numberless other instances, the care and wise arrangement of a superintending Providence, by which creatures small and insignificant in the scale of creation, are led to choose the climate most favourable to them, and to hasten towards another region, just at the period when a longer tarry in the one they inhabit would be fatal to their existence.

——Where the Northern Ocean, in vast whirls,
Boils round the naked melancholy isles,
Of furthest Thule, and the Atlantic surge
Pours in among the stormy Hebrides;
Who can recount what transmigrations there
Are annual made? what nations come and go?
And how the living clouds on clouds arise;
Infinite wings! till all the plume-dark air,
And rude resounding shore are one wild cry.

Most birds perform their migrations during the night, but there are some that travel only by day, and others that stop not either by night or by day. Among the first are the owl, blackbird, &c., and a great number of aquatic birds; among those that travel by day are the crow, pie, titmouse, wren, woodpecker, chaffinch, goldfinch, lark, swallow, and some others; and of those which do not intermit their flight are the heron, wagtail, yellow-hammer, stork, crane, plover, swan, and wild goose. These choose a bright moonlight season in which to set out on their journey.

The flight of birds has been estimated from fifty to a hundred and fifty miles an hour, though some heavy birds scarcely exceed thirty miles an hour. Bishop Stanley mentions in his *Familiar History of Birds*, an easy way by which the flight of birds may be determined with tolerable accuracy. Supposing any bird, a partridge, for instance, should rise from the middle of the stubble, and fly in a straight line over a hedge, all the observer has to do, is to note by the second's hand of a watch, the number of seconds between the birds rising and that of its topping the hedge; and then ascertain the distance between the point from whence it rose and the hedge, by stepping, and counting the number of paces; when, supposing each pace to be a yard, we have a common rule of three sum. Thus, if a partridge, in three seconds, flies one hundred yards, how many yards will it fly in 3600 seconds, or one hour?

Another method of ascertaining the flight of birds is by carrier-pigeons. The same author tells us of a recent instance, in which fifty-six of these birds were brought over from Holland, and set at liberty in London. They were turned out at half-past four o'clock in the morning, and all reached their dovecots at home by noon, but one favourite pigeon, called *Napoleon*, arrived about a quarter before ten o'clock, having performed the distance of three hundred miles, at the rate of above fifty miles an hour, supposing he lost not a moment, and proceeded in a straight line; but as they usually wheel about in the air for some time before they start, the first bird must have flown most likely at a still quicker rate. It is probable that most birds perform their journey to distant countries by stages of a few hours' flight, resting and recruiting their strength in convenient situations. We need not suppose them often to cross the wide expanse of the ocean, but take it at its narrowest portions, as the channel between France and England, the Mediterranean, &c., and so pursuing their way across the continent. Their power of remaining on the wing does not excite so much surprise as the motives which lead them to undertake such distant flights, and the instinct which guides them so unerringly in their aerial course; for though we have named the deficiency of food as one of the probable causes of migration, this does not apply in many cases we might mention, and we are more and more at a loss to account for the facts relating to several species of the feathered race.

Of all migrating birds, the cranes may perhaps be considered the most remarkable. They seem to be most endowed with foresight, and have every appearance of consultation and regular preparation for the time of their departure. They utter peculiar cries several days before, and assemble with much noise and bustle. They then form themselves into two lines, making an angle, at the vertex of which, one of their number, who is looked upon as the general director of their proceedings, takes his place. The office of the leader seems to be to exercise authority, and issue orders to the whole party, to guide them in inclement weather in their circling flight, to give the signal for their descent, feeding, &c. Piercing cries are heard, as if of commanding and answering to the command. If the leader grows tired, his place is taken by the bird next him, while he retires to the end of the line, and thus their orderly flight is accomplished.

Where the Rhine loses his majestic force
In Belgian plains, won from the raging deep,
By diligence amazing, and the strong
Unconquerable hand of Liberty,
The stork-assembly meets; for many a day
Consulting deep, and various, ere they take
Their arduous voyage through the liquid sky:
And now their route designed, their leaders chose,
Their tribes adjusted, cleaned their vigorous wings;
And many a circle, many a short essay,
Wheeled round and round, in congregation full
The figured flight ascends, and riding high
The aerial billows, mixes with the clouds.

In order that birds may fly with ease, and continue long on the wing, they must fly against the wind, and patiently do they wait for a favourable time in this respect. The sudden change of the wind will sometimes cause numbers of quails, which are heavy in their flight, to be drowned in crossing the Mediterranean Sea. Yet there are certain sea-faring birds so wonderfully endowed, as to remain almost continually on the wing, and which are often found at the distance of more than a thousand miles from land. The gigantic albatross is one of these, with its enormous expanse of wing, measuring fourteen feet, or even more, from tip to tip. But the bird which surpasses all others in its power of flight is the frigate-bird, which seldom visits the land, except at the breeding season, and is never seen to swim or rest upon the waters. With such an instance of adaptation to the regions of the air, we need no longer wonder at the power by which our birds are enabled to remain so long on the wing, as to perform their periodical migration to other lands.

It has been observed that the least willow wren, and the stone curlew, generally appear amongst us during the last week in March, while the following birds are not often with us till from about the 14th to the 20th of April. The nightingale, blackcap, chimney-swallow, redstart, yellow willow-wren, grasshopper lark, martlet, and pied fly-catcher. At the end of April and beginning of May, are seen the lesser reed sparrow, cuckoo, sand-marten, great willow-wren, spotted fly-catcher, black marten, and landrail; while about the middle of May, the swift, and the goat-sucker or fern-owl, usually join the throng.

The subject of migration is one of so much interest that we would gladly engage some of our readers, as far as practicable, to notice the time of arrival, the rapidity of flight, and other circumstances connected with our migratory birds, so that from continued observation, in various quarters, we may gain as much knowledge as possible of this beautiful and wonderful part of the economy of nature.

> Ye tell us a tale of the beautiful earth,
> Birds that o'ersweep it in power and mirth!
> Yet, through the wastes of the trackless air,
> *Ye* have a guide, and shall *we* despair?
> Ye over desert and deep have pass'd—
> —So shall *we* reach our bright home at last

THE LABURNUM, (*Cytisus laburnum.*)

> *Laburnum*, rich
> In streaming gold,

Is one of those beautiful productions of Spring, anticipated by the poet, in looking forward to the season when the trees

> Shall put their graceful foliage on again,
> And more aspiring, and with ampler spread,
> Shall boast new charms, and more than they have lost.

This graceful tree is not a native of this country, but is found in a wild state in the woods of Germany, Austria, Switzerland, Italy, &c.; while *Cytisus alpinus*, a tree very nearly resembling the laburnum, is found chiefly on the Alps of Europe. There are about thirty species of the genus *Cytisus*, all hardy papilionaceous shrubs, inhabiting temperate regions, bearing *ternate* leaves, that is, leaves growing in threes, as above represented, and, with only one exception, (*Cytisus purpureus*,) yellow flowers.

In England the laburnum is principally cultivated as an ornament to landscape and garden scenery. It is an early blossoming tree, putting forth its "golden chains" at the latter end of May or the beginning of June, and presenting, with its numerous and long branches of pendant yellow flowers, a very showy appearance. This brilliant livery does not long adorn the tree, for the lawn or parterre soon receives showers of blossoms shed from its branches, and the long seed-pods are shortly found in their places.

This tree might probably be cultivated as a timber-tree with great advantage, for its wood is exceedingly tough and elastic, and wherever very hard and compact timber is required in small pieces, it is now used as superior to most other sorts of wood. The Romans valued it next to ebony, and in some of its qualities it is even to be preferred to that wood. Its natural colour is likewise good, and by the application of lime-water it may be rendered almost black.

It does not often attain a large size in this country, and the trunk is slender in proportion to its usual height, but it is nevertheless employed for many useful purposes, being made into wedges, pulleys, pegs, knife-handles, &c. Where it is allowed to attain its full dimensions, its timber is available for cabinet work of different kinds, and besides its durability, it looks very handsome and takes a fine polish. Chairs made of it are much stronger than mahogany. Laburnum is however harder to work than the latter wood, and is of an oily consistency, which makes it doubtful whether glue would adhere to it equally well. The oil which it contains, and which never entirely dries out, makes it less liable to splinter than many other woods. It is consequently valuable for pins of blocks, and for mill-work. For pillars, bed-posts, &c., it is also excellent.

The laburnum is one of those leguminous plants which yield poisonous seeds. Children often amuse themselves with opening the long seed-pods, and stringing the small shining bean like seeds for necklaces. They are sometimes foolish enough to eat these seeds, notwithstanding their nauseous bitter taste, which one would suppose a sufficient preventative to their doing so, and many accidents have happened in consequence.

An active and most deleterious principle has been discovered in these seeds, called *Cytism* or *Cytisine*, which is described as being a bitter, brownish-yellow, neutral, uncrystallizable substance, of which small doses killed various animals, amidst vomiting and convulsions, and eight grains taken by a man in four doses brought on giddiness, violent spasms, and frequency of the pulse, lasting for two hours, and followed by exhaustion. It is said that even a garland of the flowers, if worn for some time, will occasion head-ache.

The tree is a very hardy one growing in almost any soil, but when young it is often spoiled by the gnawing of hares and rabbits, who feed on the bark in winter, when other supplies of food fail.

When it is desired to plant laburnum on a large scale, the seed-pods should be collected, and dried thoroughly in an airy loft, then threshed, and the seeds preserved in bags or boxes till spring.

February is the month for sowing the laburnum. A light, deep, and sandy soil should be chosen, and the seeds placed an inch apart, and covered three-quarters of an inch thick. The seeds are nearly sure to grow, and must not be planted thicker than this, or the young plants will lose their leaves, become mildewed, and die.

> WE sail the sea of life—a calm one finds,
> And one a tempest, and the voyage o'er,
> Death is the quiet haven of us all.

GENIUS is allied to a warm and inflammable constitution, delicacy of taste to calmness and sedateness. Hence it is common to find genius in one who is a prey to every passion; but seldom delicacy of taste. Upon a man possessed of this blessing, the moral duties, no less than the fine arts, make a deep impression, and counterbalance every irregular desire; at the same time, a temper calm and sedate is not easily moved, even by a strong temptation.—LORD KAIMES.

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